Audit Report

YEAR 2000 COMPUTING PROBLEM REPORTS:
AUGUST 1997 REPORT

Report No. 98-077 February 18,1998

Office of the Inspector General
Department of Defense

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Acronyms

CIO	Chief Information Officer
OMB	Office of Management and Budget
Y2K	Year 2000

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
400 ARMY NAVY DRIVE
ARLINGTON. VIRGINIA 22202

February 18, 1998

MEMORANDUM FOR ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE)

SUBJECT: Audit Report on DoD Year 2000 Computing Problem Reports: August 1997 Report (Report No. 98-077)

We are providing this audit report for information and use. This report is the first of a series, the primary purpose of which is to provide the DoD Chief Information Officer and other senior DoD managers with an independent assessment of DoD progress, including identifying areas of concern, related to its year 2000 efforts.

We considered management comments on a draft of this report when preparing the final report. Comments on the draft of this report conformed to the requirements of DoD Directive 7650.3 and left no unresolved issues. Therefore, no additional comments are required.

We appreciate the courtesies extended to the audit staff. Questions on the audit should be directed to Ms. Mary Lu Ugone, Audit Program Director, at (703) 604-9049 (DSN 664-9049); Mr. James W. Hutchinson, Audit Project Manager, at (703) 604-9060 (DSN 664-9060); or Mr. Timothy J. Harris, Audit Team Leader, at (703) 604-9053. If management requests, we will provide a formal briefing on the audit results. See Appendix D for the report distribution. The audit team members are listed inside the back cover.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Office of the Inspector General, DoD

Report No. 98-077 **February 18, 1998**
(Project No. 7RE-6023)

Year 2000 Computing Problem Reports: August 1997 Report

Executive Summary

Introduction. Information technology systems have typically used two digits to represent the year, such as "97" representing 1997, to conserve electronic data storage and reduce operating costs. With the two-digit format, however, the year 2000 is indistinguishable from 1900. As a result of that ambiguity, computers and associated systems and application programs that use dates to calculate, compare, and sort could generate incorrect results when working with years after 1999.

This is one of a series of reports being issued by the Inspector General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the year 2000 computing challenge.

Audit Objectives. The overall audit objective was to evaluate the DoD year 2000 oversight actions and reports submitted to the Office of Management and Budget. Specifically, we determined whether the DoD quarterly reports to the Office of Management and Budget were reasonable and accurate. We also evaluated the internal reporting requirements and process used by DoD to monitor and oversee the DoD year 2000 efforts.

Audit Results. The DoD Component August 1997 reports on year 2000 did not provide all the required information and were not fully reliable. Accordingly, DoD does not yet have an adequate baseline to effectively measure its year 2000 progress. The audit results are detailed in Part I.

Summary of Recommendations. We recommend an update to the DoD Year 2000 Management Plan that reflects changes in reporting requirements and includes adequate procedures on how year 2000 quarterly reports should reconcile.

Management Comments. The Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) concurred with the recommendation and stated that the revised DoD Year 2000 Management Plan, which is planned to be issued in February 1998, would be updated as recommended.

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Part I - Audit Results

Audit Background

The year 2000 (Y2K) problem is rooted in the way dates are recorded and computed in information technology systems. For the past several decades, computer systems have typically used two digits to represent the year, such as "97" representing 1997, to conserve on electronic data storage and reduce operating costs. With the two-digit format, however, the Y2K is indistinguishable from 1900. As a result of the ambiguity, computers and associated system and application programs that use dates to calculate, compare, or sort could generate incorrect results when working with years after 1999.

DoD Y2K Management Strategy. In his role as the DoD Chief Information Officer (CIO), the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) issued the "DoD Year 2000 Management Plan" (the Plan) in April 1997. The Plan provides the overall DoD strategy and guidance for inventorying, prioritizing, fixing, or retiring systems, and for monitoring progress. According to the Plan, the CIO has overall responsibility for overseeing the DoD solution to the Y2K problem. Each DoD Component is responsible for awareness, assessment, renovation, validation, and implementation action. The Plan includes a description of the five-phase Y2K management process and designates the Defense Integration Support Tools database as the official repository of DoD Component information technology systems data.

The Five-Phase Management Process. Each of the five phases listed below represents a major Y2K program activity or segment. Target completion dates range from December 1996 through November 1, 1999.

- Phase I - Awareness. Organization and planning take place. Target completion date: December 1996.

- Phase II - Assessment. Scope of Y2K impact is identified and system level analyses take place. Target completion date: June 1997.

- Phase III - Renovation. Required system fixes are accomplished. Target completion date: December 1998.

- Phase IV - Validation. Systems are confirmed as Y2K compliant through assorted testing and compliance processes. Target completion date: January 1999.

- Phase V - Implementation. Systems are fully operational after being certified as Y2K compliant. Target completion date: November 1, **1999.**

Defense Integration Support Tools Database. Originally designed to support the planning and execution of the DoD automated information system

migration strategy, the Defense Integration Support Tools database was selected to provide DoD-wide Y2K-related information that DoD managers could use to track and monitor the transition to Y2K compliance of mission-critical and other designated systems. The Defense Integration Support Tools database, maintained by the Defense Information Systems Agency, contains data on designated DoD Component information technology systems. The information includes hardware platforms, operating systems, applications languages, communications, and interfaces.

Y2K Reporting Requirements. DoD Components are required to submit Y2K quarterly reports to the CIO to satisfy both DoD and Office of Management and Budget (OMB) requirements.

DoD Reporting Requirements. On March 12, 1997, the CIO issued the memorandum "Year 2000 Refined Reporting Requirements for DoD," which established minimum, quarterly reporting requirements for Y2K assessment and progress across DoD. The purpose of the reporting requirement was to provide the CIO of DoD and CIOs of DoD Components with the visibility necessary to ensure a thorough and successful transition to Y2K compliance for all DoD systems. The DoD Components are required to report the status of their Y2K efforts to the CIO of DoD each quarter, beginning April 18, 1997. The CIO of DoD identified 23 DoD Components that are required to report on the status of systems that have been entered into the Defense Integration Support Tools Database. The information reported is intended to show the status of DoD Y2K efforts and is being used by the CIO of DoD to perform oversight for DoD Y2K efforts and to fulfill OMB reporting requirements at the DoD level.

OMB Reporting Requirements. On May 7, 1997, OMB issued the "Memorandum on Computer Difficulties Due to the Year 2000 -- Progress Reports." The purpose of the memorandum is to provide Y2K progress reports to Congress and the public. It requires heads of selected Government agencies to report on the status of Y2K efforts each quarter, with the initial report due May 15, 1997. Each agency is required to report on mission-critical systems, including information on the number of systems that are Y2K compliant, being replaced, being repaired, and being retired. As of July 31, 1997, DoD reported 3,695 mission-critical systems to OMB. Of those systems, 652 were already Y2K compliant, 267 were to be replaced, 2,593 were being repaired, and 183 were to be retired. The total cost of the DoD Y2K effort was estimated at $1.4 billion. In addition, DoD reported that, to date, no DoD Component has reported delayed schedules for mission-critical systems. Appendix C contains the supporting data of the August 1997 Y2K report, which was submitted to OMB on August 15, 1997.

'The 23 DoD Components include all Defense agencies and the Services. Some of the smaller DoD agencies are consolidated into 1 of the 23 DoD Components.

Audit Objectives

The overall audit objective was to evaluate the DoD Y2K oversight actions and reports submitted to OMB. Specifically, we determined whether the DoD quarterly reports to OMB were reasonable and accurate. We also evaluated the internal reporting requirements and process used by DoD to monitor and oversee DoD Y2K efforts. Because of the urgency of reporting the audit results to senior DoD management, we did not formally evaluate related management controls. See Appendix A for a discussion of the scope and methodology and Appendix B for a summary of prior coverage.

Year 2000 Information Technology System Reporting

The DoD Component August 1997 Y2K reports did not provide all the required information and were not fully reliable. The reports lacked required and reliable information because DoD did not establish clear reporting guidance and requirements. Accordingly, DoD has not established an adequate baseline to effectively measure its Y2K progress.

Y2K Quarterly Reporting

DoD Quarterly Reports to OMB. After consolidating DoD Component reports, the CIO submitted the first two DOD-level reports to OMB on May 15 and August 15, 1997. The following table provides a comparison of the total number of mission-critical systems reported to OMB.

Reported Status of DoD Mission-Critical Systems

	First Quarter (May 1997)	Second Quarter (August 1997)
Total mission-critical systems	3,962	3,695
Already Y2K compliant	582[1]	652
Being replaced	473[2]	267
Being repaired	2,752[1]	2,593
Being retired	487[1]	183
Undetermined[3]	141'	

'Changes anticipated as assessments are completed.
[2]Not included in total. Entries may have been reported twice
[3]Category reported only for First Quarter

The DoD Y2K report to OMB in August 1997 showed progress toward ensuring its information technology systems are Y2K compliant. The number of compliant systems increased by 70 from May to August 1997. However, conclusions based on further comparison would be questionable because the information used to compile the DoD report to OMB was not fully complete or reliable.

Component Quarterly Reports. Although DoD Component reports were not fully complete or reliable, the CIO staff stated that they were substantially more

complete and accurate than the first reports because the DoD Components better understood the reporting requirements. However, our analyses of the August 1997 reports did not confirm that statement.

Completeness of Reports. The DoD Component reports did not substantially improve from the previous quarter. Our analysis showed that only one DoD Component submitted a complete report for May 1997. Of the 23 DoD Components required to submit an August 1997 report, initially, 14 were incomplete, 4 were complete, and 5 did not submit a report, but instead, requested that the CIO staff extract the report data from the Defense Integration Support Tools database. The 14 incomplete reports were missing required Y2K information such as:

- the number of compliant systems,
- the number of noncompliant systems in each of the required five phases, and
- the cost to repair noncompliant systems

The incomplete reports were also missing infrastructure devices controlled by information technology, such as personal computers, file servers, fax machines, elevators, and access security systems.

Reliability of Reports. The DoD Component Y2K reports for August 1997 were unreliable. Of the 23 DoD Components required to submit quarterly reports, 11 submitted at least one report that did not reconcile.[2] The quarterly reports did not reconcile because the reporting requirements memorandum that the DoD CIO issued did not provide adequate procedures on how the reports should balance. Further, for DoD Components that submitted a report that did not reconcile, CIO staff needed to resolve discrepancies with the DoD Components before a report could be submitted to OMB. The reconciliation process is time-consuming and uses resources that could be better spent on CIO oversight responsibilities and the Y2K effort. We believe that reporting guidance, which includes sufficient reconciliation procedures, is needed in the DoD Y2K Management Plan to reduce the amount of resources being expended to reconcile the quarterly reports.

Procedures and Requirements for DoD Component Y2K Reports. Reporting procedures and requirements for Y2K reports need to be improved to increase the reliability and usefulness of the information being collected.

[2]For a second quarter report to reconcile, the number of noncompliant systems minus the number of systems that are being retired should equal the number of systems that are placed in the five phases. However, the reconciliation procedures were changed for third quarter reporting in that the number of systems being replaced will also be subtracted from noncompliant systems.

Procedures for Y2K Reports. Although a comparison of the numbers provided to OMB in the first two quarterly reports indicated that DoD was progressing in identifying and fixing systems with Y2K problems, such a conclusion may be misleading because the procedures used for determining the numbers reported to OMB differed substantially. The number of systems and the various phases they were in were changed by the Components in response to continuing refinement in reporting procedures. For example, the Navy reported 899 mission-critical systems for May 1997 and 289 for August 1997. Accordingly, meaningful comparisons between the first two quarterly reports submitted to OMB were difficult. The CIO acknowledged that different reporting methods were used for the August 1997 quarterly report to OMB, and stated that the report will provide a stable baseline against which future reports can be meaningfully compared. However, we believe that the reporting procedures have to be better defined in the DoD Y2K Management Plan (the Plan) before adequate comparison can occur between the reporting periods.

Reporting Requirements and Definitions. The wide disparity in the number of systems that the DoD Components reported (see Appendix C) indicates that the DoD Components did not consistently interpret the CIO reporting requirements. The Plan provides definitions for "system" and "mission-critical, " but the definitions are nonspecific and open to interpretation. Because DoD Component interpretations of those definitions were not uniform, the usefulness of DoD Component reports for oversight purposes by either the DoD CIO or OMB was questionable.

Total Systems Reported. A Y2K system is defined in the Plan as:

> An automated process that uses information technology such as computer hardware and software to perform a specific function, application, or service.

The total number of systems reported by DoD Components varied greatly. For example, the Army reported 13,687 systems for August 1997, while the Navy and the Air Force reported 1,970 and 2,584 systems, respectively. It is reasonable to conclude that the Army does not have almost seven times more information technology systems than the Navy or five times more systems than the Air Force. Conversely, some DoD Components reported no or few systems. For example, the Armed Forces Information Service and the Defense Contract Audit Agency reported 0 and 1 system, respectively.

Mission-Critical Systems Reported. The Plan defines mission-critical as:

> A system that when its capabilities are degraded, the organization realizes a resulting loss of a core capability.

The definition of mission-critical is important because OMB requires Y2K information for all mission-critical systems. The number of mission-critical systems reported varied greatly. In the August 1997 report, DoD reported to OMB 3,695 mission-critical systems. One DoD Component, the National Security

Agency, reported 1,573 mission-critical systems, or about 40 percent of the total number of mission-critical systems that DoD reported. In comparison, the Army, the Navy, and the Air Force reported 367, 289, and 395 systems as mission critical, respectively. We noted that six DoD Components judged 100 percent of their systems as being mission critical, while three DoD Components reported fewer than 10 percent of their systems as mission critical. Conclusively, the DoD Components needed clearer definitions of reporting terminology to reduce misinterpretations. DoD Components may have submitted incomplete and unreliable information because of the uncertainty of which systems to report and whether to report them as mission critical.

Management Action. During our audit, senior DoD officials became aware that vague definitions negatively affected the usefulness and accuracy of Y2K reporting and have begun to take corrective action. On October 16, 1997, the DoD Y2K Steering Committee, which is composed of senior DoD managers and is chaired by the Deputy Secretary of Defense, assigned the responsibility of standardizing definitions for quarterly reporting to the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence).

Initial Data for Next Reports. According to CIO staff, initial input for the next round of reports was significantly improved over the August 1997 reports. Citing only one incomplete report, CIO staff stated that the DoD Components submitted improved reports because reporting guidance and direction issued by the CIO have become stable. We have not yet evaluated the DoD Component November 1997 quarterly reports, but we agree that positive changes were made to the reporting process and specific reporting procedures. The next report in our series of audit reports on Y2K issues will address, if appropriate, further areas of concern related to quarterly Y2K reporting.

Summary

Initial problems are to be expected in establishing any new reporting process, especially on a DoD-wide basis. Additionally, both OMB and DoD established quarterly reporting requirements, but neither organization published specific guidance on how the quarterly reports were to be formulated. Further, DoD definitions provided for Y2K reporting purposes were too broad. Accordingly, DoD Component reports were not fully complete or reliable. More important, reporting consistency was insufficient to enable useful comparison of quarterly reports.

Specific reporting guidance and requirements have evolved since the requirement for quarterly reporting was established. The dissemination of that guidance by CIO staff was informal; that is, by electronic mail and telephone conversations. Because Y2K quarterly reporting guidance and procedures have matured and stabilized, they need to be formally issued to DoD organizations. We agree with CIO staff that the best mechanism for formal distribution is a revised DoD Plan. The revised Plan should set forth specific procedures for

DoD Component Y2K reporting and include clarified definitions. Until Y2K quarterly reports become stable and consistent, the reports will continue to be of limited value for oversight purposes.

Management Comments on the Finding and Audit Response

Management Comments on Completeness of DoD Component Reports. The Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) provided comments on the draft report discussion of the completeness of DoD Component reports, stating that the second quarterly reports were more complete than the first quarterly reports, and that the reporting of embedded chip information was the only "incomplete" category of data not submitted by the Components. The complete text of management comments is in Part III of this report.

Audit Response. We agree with the Acting Assistant Secretary that the second quarterly reports were more complete than the first quarterly reports. However, we continue to believe that the initial submission of incomplete reports by 14 of 23 DoD Components indicates substantial uncertainty and confusion about the Y2K reporting process, procedures, and requirements. We do not agree that embedded chip information was the only category of information not initially reported. As stated in the draft report, other categories of data which were initially omitted included the number of compliant systems, the number of noncompliant systems in each of the five phases, and the cost to repair noncompliant systems.

Management Comments on the Usefulness of Information Collected. Regarding the utility of collecting numbers of personal computers and communications system components, the Acting Assistant Secretary recognized that some of the information required may not be ideal for oversight purposes, but he believes that the collection of that information is necessary to help ensure that all DoD information technology equipment is evaluated for Y2K compliance.

Audit Response. In the draft report, we concluded that some data that the CIO required was of little use for oversight purposes. Although the primary concern of OMB personnel was mission-critical systems, they also required a brief narrative summarizing progress made in other infrastructure systems that relied on embedded microchips, such as elevators, security systems, and biomedical devices. Within the infrastructure reporting category, the CIO also requires the DoD Components to report personal computers, file servers, and communications hardware and software modules. We questioned the need for that additional reporting requirement as the information did not provide a gauge for monitoring progress because the total number of DoD personal computers and network components had not been defined. Additionally, because the DoD definition of "system" is broad and open to interpretation, DoD had no assurance that the personal computers and networks reported in the "infrastructure" category were not also reported as part of other information technology systems.

We continue to question whether watching aggregate numbers grow provides valuable oversight information. However, upon reconsideration, we agree that oversight options for ensuring that all of the information technology resources for DoD are limited and that some degree of oversight is better than none. Additionally, on January 20, 1998, OMB issued new quarterly reporting requirements which now specifically require telecommunications systems to be reported in the "infrastructure" category. Further, on February 4, 1998, the Acting Assistant Secretary's staff orally committed to include in the revised DoD Plan specific cautions to the DoD Components about possible "double counting" in their quarterly Y2K reports. Based on those factors, the issue was omitted from our final report.

Recommendations for Corrective Action and Management Comments

Deleted Recommendation. As a result of management comments, we deleted draft Recommendation 2. Draft Recommendation 1. is now unnumbered.

We recommend that the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence), in the role of the DoD Chief Information Officer, update the DoD Year 2000 Management Plan to reflect changes in reporting requirements and to include adequate procedures on how year 2000 quarterly reports should reconcile.

Management Comments. The Assistant Secretary concurred and stated that the DoD Y2K Management Plan would be updated accordingly. The Assistant Secretary anticipates issuance of the updated Management Plan in February 1998. The complete text of management comments is in Part III of this report.

Part II - Additional Information

Appendix A. Audit Process

Scope and Methodology

Work Performed. We reviewed the reports that DoD Components submitted to the CIO for the first and second reporting quarters, ending April 30 and July 31, 1997, respectively. We evaluated the completeness and reliability of the reports in accordance with CIO reporting requirements and the requirements stated in the DoD Y2K Management Plan. We also evaluated the usefulness of the report information for oversight purposes. We interviewed personnel within the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) who are responsible for issuing reporting guidance and collecting the Y2K information from the DoD Components and submitting the information to OMB. We also interviewed personnel within the DoD Components who are responsible for the Y2K reporting. The scope of the audit was limited in that we did not review the management control program because DoD has acknowledged the Y2K computing problem as an area with material management control weaknesses and further reporting on those weaknesses would be redundant.

This is one of a series of reports being issued by the Inspector, General, DoD, in accordance with an informal partnership with the Chief Information Officer, DoD, to monitor DoD efforts to address the Y2K computing challenge. For a listing of audit projects addressing this issue, see the Y2K webpage on IGNET (at http://www.ignet.gov/).

Use of Computer-Processed Data and Statistical Sampling. We did not use computer-processed data or statistical sampling procedures for this audit.

Audit Type, Dates, and Standards. We performed this economy and efficiency audit from July through October 1997 in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD. Further details are available on request.

Appendix B. Prior Coverage and Related Publications

General Accounting Office

The General Accounting Office has conducted several audits related to Y2K issues. The audits are summarized below.

General Accounting Office Report No. AIMD-98-35 (OSD Case No. 1484), "Defense Computers: Air Force Needs to Strengthen Year 2000 Oversight," January 16, 1998. Congress requested the review of the Air Force Y2K program. The review focused on Air Force oversight of its Y2K program and the appropriateness of its strategy and actions for ensuring that the Air Force will successfully address the Y2K problem. The Air Force has taken a number of positive actions toward fulfilling its Y2K oversight responsibilities. At the same time, the Air Force had not yet adequately addressed several critical issues that would ensure that it is well-positioned to deal with the later, and more difficult, phases of Y2K correction. The review showed that some Air Force components are not adequately planning for the testing phase of their Y2K effort and developing contingency plans. Some Air Force components are also taking conflicting approaches toward determining the actual impact of the program status to their system interfaces. If the Air Force does not promptly address and take consistent action on those issues, it may well negate any success it may have in making its systems Y2K compliant. While the Air Force has enlisted the help of the Air Force Audit Agency to address some of those concerns, the Air Force must continue its comprehensive oversight to ensure that it can address unforeseen problems and delays in the next, more difficult phase.

General Accounting Office Correspondence Report No. AIMD-98-7R (OSD Case No. 1471), "Defense Computers: Technical Support Is Key to Naval Supply Year 2000 Success," October 21, 1997. The report states that Naval Supply Systems Command had not allocated sufficient resources to the Fleet Material Support Office Year 2000 Project Office to ensure that all systems interfaces were identified and adequately monitored for progress. Also, Naval Supply Systems Command had not directed that risk assessments be performed or that contingency plans be prepared at the system and functional levels. As a result of the concerns that the General Accounting Office raised, Naval Supply Systems Command and Fleet Material Support Office officials have begun addressing system interface issues by assigning full-time staff to identify date-related data elements in interface files and to ensure that date formats are compatible. The actions, together with Naval Supply Systems Command's plans for requiring systems managers to perform risk assessments and develop contingency plans for critical systems, should help mitigate the loss of operational capability at the year 2000. As Naval Supply Systems Command progresses to the renovation, validation (testing), and implementation phases of

the Y2K program, it must pay continued attention to those issues to better ensure that the year 2000 challenge is met. The Director, Test, Systems Engineering and Evaluation, concurred with a draft of this report,

General Accounting Office Report No. AIMD-97-149 (OSD Case No. 1446), "Defense Computers: Logistics Systems Support Center Needs to Confront Significant Year 2000 Issues," September 26, 1997. The report states that while Y2K improvement efforts have been initiated by the Logistics Systems Support Center on its Commodity Command Standard System program, the Logistics Systems Support Center has not completed several key project management actions associated with the assessment phase. As a result, the Logistics Systems Support Center is not presently well-positioned to move to the more difficult phases of renovation, validation, and implementation in the Y2K process phases that industry experts estimate could consume as much as three-fourths of Y2K project time and resources. The report recommends that the Logistics Systems Support Center still needs to take a number of actions to increase its chances of success, including managing competing workload priorities, planning for testing, clarifying and coordinating written systems interface agreements, and developing a contingency plan. To increase its chances of successfully managing its Y2K program, the Logistics Systems Support Center will also need to institutionalize a repeatable software change process that can be used from project to project. Given the prominence of date processing in the Commodity Command Standard System and its central mission of sustaining the solider in the field, the Logistics Systems Support Center cannot delay any longer, and must demonstrate that it will perform all the key actions associated with sound Y2K planning and management. The Director, Test, Systems Engineering and Evaluation, concurred with a draft of the report.

General Accounting Office Correspondence Report No. AIMD-97-120R (OSD Case No. 1399), "Defense Computers: Standard Systems Group Needs to Sustain Year 2000 Progress," August 19, 1997. The report states that the Standard Systems Group must further emphasize management and oversight of systems interfaces to ensure successful implementation of Y2K-compliant systems throughout its user community. Also, a number of Standard Systems Group systems must use standard interface message formats to exchange data that are defined by external entities outside the control of the Standard Systems Group. Some of the message formats had not been finalized by the organizations responsible for their definition. Recently, officials from the Standard Systems Group's Year 2000 Project Office began addressing the interface issue. If effectively implemented by the project office, the effort should be a positive step toward preventing loss of operational capabilities between the Standard Systems Group's internal and external systems' interface message formats at the year 2000. The Air Force Director, Communications and Information, concurred with a draft of the report.

General Accounting Office Report No. AIMD-97-112 (OSD Case No. 1395), "Defense Computers: Improvements to DoD Systems Inventory Needed for Year 2000 Effort," August 13, 1997. The report states that while improvement efforts have been initiated, the Defense Integration Support Tools database will not be usable and reliable in time to have a beneficial impact on Y2K correction efforts. The Defense Integration Support Tools contains the

DoD-wide inventory of automated information systems. The report recommended investigation of all duplicate, inactive, and incomplete entries; expedited development and implementation of the purging methodology; and expansion of information contained in the database for individual systems to include key program activity schedules that managers of interfacing systems need to ensure that their systems' interfaces are maintained during the renovation phase. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) concurred with the recommendations and stated that DoD plans to take corrective action by performing statistical sampling of the Defense Integration Support Tools database to validate accuracy.

General Accounting Office Report No. AIMD-97-106 (OSD Case No. 1389), "Defense Computers: Issues Confronting Defense Logistics Agency in Addressing Year 2000 Problems," August 12, 1997. The report states that the Defense Logistics Agency had already assessed the Y2K impact on its operations; inventoried its systems; conducted pilot projects to determine Y2K effects on some of its major systems; and developed and issued policies, guidelines, standards, and recommendations on Y2K correction for the agency. The Defense Logistics Agency had not prioritized the 86 automated information systems that it plans to have operational in the year 2000 to ensure that mission-critical systems are corrected first. In addition, the Defense Logistics Agency had not developed contingency plans in the event that any of the systems cannot be corrected on time. The report recommended that the Defense Logistics Agency complete signed, written interface agreements detailing data exchange methods; develop a Y2K systems prioritization plan; and prepare contingency plans for all critical systems. The Under Secretary of Defense for Acquisition and Technology concurred with the recommendation on interface agreements and contingency plans but did not concur with the recommendation on systems prioritization, stating that the Defense Logistics Agency planning efforts and strategy for renovating its systems are adequate. The Defense Logistics Agency is in the process of ensuring that documented agreements are prepared for all interfaces requiring changes between their interface partners. Completion was expected in September 1997. The Defense Logistics Agency is also in the process of preparing contingency plans within each business area focusing on those systems that Y2K will affect. Initial plans were to be prepared by October 1997.

General Accounting Office Report No. AIMD-97-117 (OSD Case No. 1392), "Defense Computers: Defense Finance and Accounting Service Faces Challenges in Solving the Y2K Problems," August 11, 1997. The report states that the Defense Finance and Accounting Service had developed a Y2K strategy consistent with the DoD Y2K Management Plan and has defined conditions that automated information systems must meet to obtain certification as Y2K compliant. However, the Defense Finance and Accounting Service had not identified all critical tasks for achieving Y2K objectives, established milestones for completing all tasks, performed formal risk assessments of all systems to be renovated, or prepared contingency plans in the event that renovations are not completed in time or fail to operate properly. The report also states that the Defense Finance and Accounting Service had not identified all system interfaces and had completed only 230 of 904 written agreements

with interface partners. Further, the Defense Finance and Accounting Service had not adequately ensured that testing resources will be available to determine whether all operational systems are compliant before the year 2000. The report recommended that the Defense Finance and Accounting Service identify Y2K program actions and milestones, issue guidance to ensure continuity of operations, identify external interfaces and obtain written agreements describing the method of data exchange, and devise a testing schedule to ensure that all systems can operate in a Y2K environment. The Under Secretary of Defense (Comptroller) concurred with the recommendations. The Defense Finance and Accounting Service agreed to update its existing Year 2000 Executive Plan and its Corporate Contingency Plan. It also agreed to have all written interface agreements with interface partners in place by September 30, 1997, and to fully implement its certification process for ensuring that all systems are Y2K compliant. Further, the Defense Finance and Accounting Service agreed to devise a testing schedule that identifies the test facilities and resources needed for performing proper testing of its systems in a Y2K environment.

General Accounting Office Publications. Among the publications that the General Accounting Office issued relating to the Y2K problem are the Exposure Draft (GAO/AIMD-10. 1.14), "Year 2000 Computing Crisis: An Assessment Guide," February 1997; and the Exposure Draft (GAO/AIMD-10.1.17), "Year 2000 Computing Crisis: Audit Program Guide," June 1997. The assessment guide provides a framework and a checklist for assessing the readiness of Federal agencies to achieve Y2K compliance. The assessment guide provides information on the scope of the challenge and offers a structured approach for reviewing the adequacy of agency planning and management of the Y2K program. The audit program guide provides information technology system auditors with more detailed guidelines to use in reviewing individual agency efforts in solving Y2K issues.

Inspector General, DoD

Inspector General, DoD, Report No. 98-065, "DoD Information Technology Solicitations and Contract Compliance for Year 2000 Requirements," February 6, 1998. The review focuses on the compliance of DoD information technology solicitations and contracts with Federal Acquisition Regulation section 39.106, "Y2K Compliance. " The report states that 20 of the reviewed 35 indefinite-delivery/indefinite-quantity and indefinite-delivery-requirement information technology contracts (for commercial off-the-shelf products) did not have the required Federal Acquisition Regulation Y2K compliance language, and none of the 35 contracts required testing of purchased products. As a result, DoD has no assurance that information technology products purchased were Y2K compliant. Further, the purchase of noncompliant products may seriously hamper the ability of DoD to perform its administrative and warfighting mission requirements. Additionally, because 33 of the 35 contracts are available for use by other Federal agencies, nonconforming contract items could negatively affect the ability of the Federal Government to survive the Y2K crisis. After the audit results briefing, the Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) and the

Director, Defense Procurement, drafted new guidance for the DoD Components that would require Y2K-compliant information technology and testing of items purchased from the information technology contracts. The guidance was later signed by the Acting Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). In addition, Army, Navy, and Air Force contracting officers completed the contract modifications to include the required Federal Acquisition Regulation Y2K language in 17 additional contracts. Three other Air Force contracts are being reviewed.

Inspector General, DoD, Report No. 98-074, "Sharing Year 2000 Testing Information on DoD Information Technology Systems," February 12, 1998. The review focused on whether planning for year 2000 testing is adequate to ensure that mission critical DoD information technology systems will continue to operate properly after the year 2000. While DoD has designated the use of Internet homepages as the primary means of sharing year 2000 related information and DoD Components have made progress in establishing year 2000 information on their respective homepages, the process for sharing year 2000 testing information can be more effective. The report states that DoD Components may be expending time-sensitive resources inefficiently in solving the year 2000 problem through the duplication of efforts and in attempting to locate accurate testing information. Further, the ability to retrieve and use all appropriate testing information in a timely and efficient manner will be instrumental in the solution of the year 2000 problem. The report acknowledged actions taken by the Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) to establish a DOD-sponsored year 2000 testing information center for collecting, analyzing, and disseminating year 2000 related testing information, and initial efforts to provide a year 2000 hotline service to the DoD Components. The report recommended that additional action be taken to notify DoD Components of the testing center's year 2000 role and responsibilities and of the DoD Components' responsibility to share testing information. The report also recommended that DoD internet homepages be organized to enable users to quickly and easily access the center for year 2000 testing information.

Appendix C. DoD Component August 1997 Reports

DoD Component	Total Systems	Mission-Critical Systems	Five-Phase Management Process			
			Assessment	Renovation	Validation	Implementation
Army	13,687	367	152	44	16	16
Navy	1,970	289	68	54	5	28
Air Force	2,584	395	174	65	31	4
Joint Staff	302	169	17	59	37	1
Ballistic Missile Defense Organization	75	37	16	1	1	0
Defense Contract Audit Agency	1	1	0	0	0	0
Defense Commissary Agency	36	7	1	2	1	3
Defense Finance and Accounting Service	186	91	24	45	2	0
Defense Intelligence Agency	109	109	90	6	13	0
DoD Intelligence Information System*	109	109	46	26	25	0
Defense Investigative Service	7	0	0	0	0	0
Defense Information Systems Agency	339	106	0	56	1	5
Defense Logistics Agency	333	14	0	6	6	0
Defense Security Assistance Agency	11	4	0	3	0	1
Defense Special Weapons Agency	115	10	1	0	0	2
National Imagery and Mapping Agency	222	175	19	40	0	0
National Reconnaissance Agency	27	27	24	3	0	0
National Security Agency	1,573	1,573	1,070	320	53	53
Office of the Assistant Secretary of Defense (Health Affairs)	112	112	27	15	6	24
Armed Forces Information Services	0	0	0	0	0	0
On-Site Inspection Agency	41	0	0	0	0	0
Under Secretary of Defense for Acquisition and Technology	75	0	0	0	0	0
Washington Headquarters Services	136	100	8	12	27	5
Total	22,050	3,695	1,737	757	224	142

*Portion centrally funded for the Armed Services.

Appendix D. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Deputy Under Secretary of Defense (Acquisition Reform)
  Deputy Under Secretary of Defense (Logistics)
  Director, Defense Procurement
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
Under Secretary of Defense for Personnel and Readiness
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)
Assistant Secretary of Defense (Health Affairs)
Assistant Secretary of Defense (Public Affairs)

Joint Chiefs of Staff

Director, Joint Staff

Department of the Army

Auditor General, Department of the Army
Chief Information Officer, Army

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy
Chief Information Officer, Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General. Department of the Air Force
Chief Information Officer, Air Force

Unified Commands

Commander in Chief, U. S European Command
Commander in Chief, U.S Pacific Command
Commander in Chief, U.S. Atlantic Command
Commander in Chief, U.S. Southern Command

Unified Commands (Cont'd)

Commander in Chief, U.S. Central Command
Commander in Chief, U.S. Space Command
Commander in Chief, U.S. Special Operations Command
Commander in Chief, U.S. Transportation Command
Commander in Chief, U.S. Strategic Command

Other Defense Organizations

Director, Ballistic Missile Defense Organization
Chief Information Officer, Ballistic Missile Defense Organization
Director, Defense Advanced Research Projects Agency
Chief Information Officer, Defense Advanced Research Projects Agency
Director, Defense Commissary Agency
Chief Information Officer, Defense Commissary Agency
Director, Defense Contract Audit Agency
Chief Information Officer, Defense Contract Audit Agency
Director, Defense Finance and Accounting Service
Chief Information Officer, Defense Finance and Accounting Service
Director, Defense Information Systems Agency
Inspector General, Defense Information Systems Agency.
Chief Information Officer, Defense Information Systems Agency
Director, Defense Legal Services Agency
Chief Information Officer, Defense Legal Services Agency
Director, Defense Logistics Agency
Chief Information Officer, Defense Logistics Agency
Director, Defense Security Assistance Agency
Chief Information Officer, Defense Security Assistance Agency
Director, Defense Security Service
Chief Information Officer, Defense Security Service
Director, Defense Special Weapons Agency
Chief Information Officer, Defense Special Weapons Agency
Director, National Security Agency
Inspector General, National Security Agency
Director, On-Site Inspection Agency
Chief Information Officer, On-Site Inspection Agency
Inspector General, Defense Intelligence Agency
Inspector General, National Imagery and Mapping Agency

Non-Defense Federal Organizations and Individuals

Chief Information Officer, General Services Administration
Office of Management and Budget
Office of Information and Regulatory Affairs
Technical Information Center, National Security and International Affairs Division, General Accounting Offke

Non-Defense Federal Organizations and Individuals (Cont'd)

Director, Defense Information and Financial Management Systems, Accounting and Information Management Division, General Accounting Office

Chairman and ranking minority member of each of the following congressional committees and subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on National Security, Committee on Appropriations
House Committee on Government Reform and Oversight
House Subcommittee on Government Management, Information, and Technology, Committee on Government Reform and Oversight
House Subcommittee on National Security, International Affairs, and Criminal Justice, Committee on Government Reform and Oversight
House Committee on National Security

Part III - Management Comments

Office of Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) Comments

ASSISTANT SECRETARY OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON. DC 203016000

January 15, 1998

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT DIRECTORATE, OFFICE OF THE INSPECTOR GENERAL, DOD

SUBJECT: Response to the Office of the Inspector General (OIG), DoD Draft Audit Report on Year 2000 Information Technology System Reporting Requirements, Project No. 7RE-6023, dated November 26, 1997

Thank you for the opportunity to review and comment on your November 26, 1997, draft audit report on reporting requirements for Year 2000 (Y2K) information technology systems. We have reviewed the report and agree that an update of the Department of Defense (DoD) Year 2000 Management Plan is needed. The report recommended, in addition, that the DoD Components be required only to report necessary and useful oversight information. Attached are my comments on the report's recommendations along with some specific comments that respond to several of the report's findings.

We appreciate the opportunity to work with the OIG audit team and to exchange information on the Y2K project. The audit is helpful for ensuring that the DoD maintains a reliable reporting mechanism that will satisfy the requirements of both the Department and the oversight agencies to whom we report our progress. Also, the audit has highlighted areas where the Department may improve the information collection process. Please incorporate this memorandum, along with the attachment, in the final audit report.

Anthony M. Valletta
(Acting)

Attachment

Final Report Reference

Response to the Office of the Inspector General (OIG)
DoD Draft Audit Report on
"Year 2000 Information Technology System Reporting Requirements"
Project No. 7RE-6023, dated November **26, 1997**

Recommendation 1: The DoDIG recommended an update to the DoD Year **2000** Management Plan reflecting changes in reporting requirements and including adequate procedures on how year 2000 quarterly reports **should** reconcile. Unnumbered

Response: Concur. Procedures for reporting progress each quarter in evaluating and repairing automated information systems (AISs) and devices controlled by information technology have been widely disseminated through meetings and electronic media. However, the Department agrees that revising the DoD Year 2000 Management Plan would codify these informal instructions into **a** single document.

The DoD Components have been participating with the DoD Chief Information officer's staff in revising the Plan since August 1997. Section 9. "DoD System Inventory and Quarterly Reporting Requirements," provides thorough instruction on providing progress status in addressing the Year 2000 (Y2K) problem, including directions on balancing the numbers that are reported. Balanced data insures reliability of the information DoD provides to Congress and others. The Department has delayed the publishing of the second edition of the Management Plan in order to include revised requirements under development by the Office of Management and Budget (OMB). The revised Plan is projected for publication in February 1998.

Recommendation 2: The OIG recommended that the reporting requirements be revised for DoD Components to ensure that only necessary and useful oversight information is reported. Deleted

Response: Non-concur. The Department understands that the Components may find the currently required reporting onerous. However, **it** has not been the intent of the Department to levy reporting that is not needed. Most reporting requirements come from Congress and OMB. Their interest and new requirements will increase.

The information we are currently collecting will continue to be required, along with additional information. For example, the Office of Management and Budget (OMB) published their third report "Progress on Year 2000 Conversion* in December 1997.

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Final Report Reference

That report accelerates target dates for completing renovation to September 1998 and implementation to March 1999. Systems that cannot meet this schedule must be reported in upcoming quarterly reports. OMB is requiring independent verification of progress and has tasked the CIO Council to develop government-wide best practices in contingency planning. Data exchanges with States must be inventoried by February 1, 1998, and Federal agencies must communicate the precise format of the data exchanges and the timing of the change to the new format by March 1, 1998.

None of the pre-existing OMB requirements have been rescinded. OMB has in preparation at this time, a draft letter which includes a requirement to provide more thorough information on efforts to fix non-mission critical system, data exchange information, the status of validation and contingency planning efforts, more extensive embedded chip data, and progress status in fixing other government-wide systems. Much of this information we are not yet collecting.

Therefore, we find the OIG recommendation to minimize reporting requirements unattainable. External Y2K "reporting requirements" will increase.

Additional **Comments**:

Deleted

Page 5, **Year** 2000 Information Technology System Reporting Requirements, last sentence: "Additionally, the Chief Information Officer for DoD collects information not required by the Office of Management and Budget and which is of limited use for oversight purposes."

Comment: There was no information collected from the Components for the third Quarterly Report to OMB that was not used in the report. The only questionable **information** may stem **from** a data item on interfaces outlined on the reporting spreadsheets. The Components were instructed to disregard the interface issues until my office provided improved guidance. None of the Components reported interface data.

Page 5

Page 6, Component Quarterly Reports, sentences 2 and 3: "The CIO staff believed that the reports for the second quarter were substantially more complete and accurate because **the DoD Components better understood the reporting requirements. However, our analyses of the reports for the second quarter did not confirm that belief."**

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Comment: The next paragraph, Completeness of Reports, indicates that the CIO staff was correct: the Components did show improvement in their submittals. Those Components who provided data that was "incomplete" did not report embedded chip information. This information is more difficult to accumulate and verify. Also, the five DoD Components who did not submit a report, but requested that the DIST be used to generate their reports were compliant with the DoD reporting requirement in making this request.

Page 8, Usefulness of Required Data: 'We concluded that some data that CIO required was of little use for oversight purposes. Although the primary concern of OMB personnel was mission critical systems, they also required a brief narrative summarizing progress made in other infrastructure systems that relied on embedded microchips, such as elevators, security systems, and biomedical devices. Within the infrastructure reporting category, the CIO requires Components to report personal computers, file servers, and communications hardware and software modules." Deleted

Comment : The DoD CIO asked for a one-line entry for each of these devices not associated with an AIS. All must be checked for Y2K compliance. It is part of the oversight process to accumulate the information that they have been checked and what their Y2K status is. There is not an inventory of the total number of DoD personal computers and network components or of the total number of bio-medical devices. The fact remains, however, that this equipment must be evaluated for Y2K compliance. The Single Agency Manager for our organization acceptance tests each new personal computer as it is delivered and has found that 30% or more of these new deliveries are non-compliant.

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Audit Team Members

This report was prepared by the Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, DoD.

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